

5'	9	18	27	36	45	54											
NCA	ATG	GGC	CGG	CCG	TGG	GAA	GGG	TGA	ATG	TGG	GTC	CAG	ACC	CGC	CCC	TCC	TCA
	63	72	81	90	99	108											
GCT	TCC	TAT	AAA	AGC	TGG	GGA	CCA	GGT	ACT	GCT	GAT	ACA	CAC	ACC	ATG	AGG	CTC
	117	126	135	144	153	162											
TCC	AGG	AGA	CCA	GAG	ACC	TTT	CTG	CTG	GCC	TTT	GTG	TTG	CTC	TGC	ACC	CTC	CTG
S	R	P	E	T	F	L	L	A	F	V	L	L	C	T	L	L	L
	171	180	189	198	207	216											
GGT	CTT	GGG	TGC	CCA	CTA	CAC	TGC	GAA	ATA	TGT	ACG	GCG	GCG	GGG	AGC	AGG	TGC
G	L	G	C	P	L	H	C	E	I	C	T	A	A	G	S	R	C
	225	234	243	252	261	270											
CAT	GGC	CAA	ATG	AAG	ACC	TGC	AGC	AGT	GAC	AAG	GAC	ACA	TGT	GTG	CTC	CTG	GTC
H	G	Q	M	K	T	C	S	S	D	K	D	T	C	V	L	L	V
	279	288	297	306	315	324											
GGG	AAG	GCT	ACT	TCA	AAG	GGC	AAG	GAG	TTG	GTG	CAC	ACC	TAC	AAG	GGC	TGC	ATC
G	K	A	T	S	K	G	K	E	L	V	H	T	Y	K	G	C	I
	333	342	351	360	369	378											
AGG	TCC	CAG	GAC	TGC	TAC	TCC	GGC	GTT	ATA	TCC	ACC	ACC	ATG	GGC	CCC	AAG	GAC
R	S	Q	D	C	Y	S	G	V	I	S	T	T	M	G	P	K	D

387	CAC ATG GTA ACC AGC TCC TTC TGC TGC CAG AGC GAC GGC TGC AAC AGT GCC TTT	405	414	423	432
	H M V T S S F C C Q S D G C N S A F				
441	TTG TCT GTT CCC TTG ACC AAT CTT ACT GAG AAT GGC CTG ATG TGC CCC GCC TGC	459	468	477	486
	L S V P L T N L T E N G L M C P A C				
495	ACT GCG AGC TTC AGG GAC AAA TGC ATG GGG CCC ATG ACC CAC TGT ACT GGA AAG	513	522	531	540
	T A S F R D K C M G P M T H C T G K				
549	GAA AAC CAC TGC GTC TCC TTA TCT GGA CAC GTG CAG GCT GGT ATT TTC AAA CCC	567	576	585	594
	E N H C V S L S G H V Q A G I F K P				
603	AGA TTT GCT ATG CGG GGC TGT GCT ACA GAG AGT ATG TGC TTT ACC AAG CCT GGT	621	630	639	648
	R F A M R G C A T E S M C F T K P G				
657	GCT GAA GTA CCC ACA GGC ACC AAT GTC CTC TTT CTC CAT ATA GAG TGC ACT	675	684	693	702
	A E V P T G T N V L F L H H I E C T				
711	CAC TCC CCC TGA AAA GCT ATC TGA ACA GAG GAA GAT AAT GTA GTG TGA AGT CCC	729	738	747	756
	H S P				

FIGURE 1B

819            828            837

**AAA AAA AAA AAA AAA AAC TCG AG 3'**

FIGURE 1C

1	N	C	A	A	T	G	G	G	C	C	G	G	C	G	T	G	G	G	A	A	G	G	G	T	G	A	A	T	G	consensus
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8941	
1	G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10033	
1	G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10644	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10774	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71854	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72861	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74452	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	155045	
1	N	C	A	A	T	G	G	G	C	C	G	C	C	G	T	G	G	G	A	A	G	G	T	G	A	A	T	G	156817	
1	A	G	A	A	G	A	G	A	C	C	A	T	N	C	C	A	G	G	A	-	-	-	-	-	-	-	-	-	-	619856
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	683480	
1	G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1291208	

31	T	G	G	G	T	C	C	A	G	A	C	C	C	G	C	C	C	T	C	C	T	C	A	G	C	T	T	C	C	consensus
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8941	
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10033	
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10644	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10774	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71854	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72861	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74452	
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	155045	
31	T	G	G	G	T	C	C	A	G	A	C	C	C	G	C	C	C	C	C	C	C	T	C	A	G	C	T	T	C	156817
26	T	G	G	G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	619856	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	683480	
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1291208	

Figure 2A

61	T	A	T	A	A	A	G	C	T	G	G	G	A	C	C	A	G	G	T	A	C	T	G	C	T	G	A	T	consensus	
1	-	-	-	-	-	-	-	-	-	-	-	-	G	G	A	-	-	-	G	G	-	-	-	-	-	-	-	-	8941	
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10033	
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10644	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10774	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71854	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72861	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74452	
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	155045	
61	T	A	T	A	A	A	G	C	T	G	G	G	A	C	C	A	G	G	T	A	C	T	G	C	T	G	A	T	156817	
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	619856	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	683480	
16	T	G	C	A	G	C	C	A	C	T	G	G	A	A	T	C	A	A	G	-	-	-	-	-	-	-	-	-	-	1291208
91	A	C	A	C	A	C	C	A	T	G	A	G	G	C	T	C	T	C	A	G	G	A	G	A	C	C	A	consensus		
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8941	
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10033	
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10644	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10774	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71854	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72861	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74452	
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	155045	
91	A	C	A	C	A	C	C	A	T	G	A	G	G	C	T	C	T	C	C	A	G	G	A	G	A	C	C	A	156817	
40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	619856	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	683480	
36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1291208	

Figure 2B

121	G	A	G	A	C	C	T	T	C	T	G	C	T	G	G	C	C	T	T	G	T	G	T	G	T	G	C	T	C	consensus	
19	A	A	G	A	C	C	T	T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8941		
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	G	C	T	C	10033		
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10644		
1	-	-	-	-	-	-	-	-	-	-	-	C	T	G	G	C	C	T	T	G	T	G	T	G	T	G	C	T	C	10774	
1	-	-	-	-	-	-	-	-	-	-	-	C	T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71854		
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72861		
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74452		
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	N	C	N	C	155045
121	G	A	G	A	C	C	T	T	C	T	G	C	T	G	G	C	C	T	T	G	T	G	T	G	T	G	C	T	C	156817	
53	A	A	G	A	C	C	T	T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	619856	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	683480	
42	A	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	T	C	1291208	

151	T	G	C	A	C	C	C	T	C	T	G	G	G	T	C	T	G	G	G	T	G	G	T	G	C	C	C	A	C	T	A	consensus
27	-	-	-	-	-	-	-	-	-	-	-	G	A	G	G	C	A	G	G	G	T	-	-	-	-	-	-	-	-	-	8941	
8	T	N	C	A	C	C	C	T	C	C	T	G	G	G	T	C	T	G	G	G	T	G	C	C	C	A	C	T	A	A	10033	
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10644	
19	T	G	C	A	C	C	C	T	C	C	T	G	G	G	T	C	T	G	G	G	T	G	C	C	C	A	C	T	A	A	10774	
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71854	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72861	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74452	
20	T	-	C	A	C	C	C	T	C	C	N	G	G	G	T	C	T	N	G	G	G	T	G	C	C	C	A	C	N	A	155045	
151	T	G	C	A	C	C	C	T	C	C	T	G	G	G	T	C	T	T	G	G	G	T	G	C	C	C	A	C	T	A	156817	
61	-	-	-	-	-	-	-	-	-	-	-	G	A	G	G	C	A	G	G	G	T	-	-	-	-	-	-	-	-	-	619856	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	683480	
47	C	G	-	-	-	-	-	-	T	C	T	T	G	-	G	T	C	T	T	N	N	N	N	N	N	N	N	N	N	N	1291208	

Figure 2C

181	C	A	C	T	G	C	G	A	A	T	A	T	G	T	A	C	G	G	C	G	G	C	G	G	G	A	G	C	consensus			
38	-	-	-	-	-	T	G	A	A	G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	A	G	G	A	G	-	8941
38	C	A	C	T	G	C	G	A	A	T	A	T	G	T	A	C	G	G	C	G	C	G	G	G	A	G	C	10033				
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10644	
49	C	A	C	T	G	C	G	A	A	T	A	T	G	T	A	C	G	G	C	G	C	G	G	A	G	C	10774					
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71854	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72861	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74452	
49	C	A	C	T	G	C	G	A	A	N	T	A	T	G	T	A	C	G	G	C	G	C	G	G	T	A	G	C	155045			
181	C	A	C	T	G	C	G	A	A	T	A	T	G	T	A	C	G	G	C	G	C	G	G	A	G	C	156817					
72	-	-	-	-	-	T	G	A	A	G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	A	G	G	A	G	-	619856
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	683480	
71	N	N	N	N	N	N	C	A	A	T	G	G	G	C	-	C	G	G	C	C	G	T	G	G	A	A	G	-	1291208			
211	A	G	G	T	G	C	C	A	T	G	G	C	C	A	A	T	G	A	A	G	A	C	C	T	G	C	A	G	C	consensus		
51	-	-	-	-	-	-	-	T	G	G	T	C	A	G	C	-	-	-	-	-	-	-	-	-	-	C	A	G	C	8941		
68	A	G	G	T	G	C	C	A	T	G	G	C	C	A	A	T	G	A	A	G	A	C	C	T	G	C	A	G	C	10033		
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10644	
79	A	G	G	T	G	C	C	A	T	G	G	C	C	A	A	T	G	A	A	G	A	C	C	T	G	C	A	G	C	10774		
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71854	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72861	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74452	
79	A	G	G	T	T	C	C	A	T	G	N	C	C	A	A	T	N	A	A	G	A	N	C	T	T	C	A	N	C	155045		
211	A	G	G	T	G	C	C	A	T	G	G	C	C	A	A	T	G	A	A	G	A	C	C	T	G	C	A	G	C	156817		
85	-	-	-	-	-	-	-	-	-	T	G	G	T	C	A	G	C	-	-	-	-	-	-	-	-	-	C	A	G	C	619856	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	683480	
99	-	G	G	T	G	-	-	-	-	-	-	-	-	-	-	A	A	T	G	T	G	G	T	C	-	-	C	A	G	-	1291208	

Figure 2D

241	AGTGACAAAGGACACATGTGTGTGCTCCCTGGTC	consensus
63	ACTGTC-----CCTGCCCTGTCCTCCA-TTC	8941
98	AGTGACAAAGGACACATGTGTGCTCCCTGGTC	10033
2	-----ACACATGTGTNCTCCTGGTC	10644
109	AGTGACAAAGGACACATGTGTGCTCCCTGGTC	10774
3	-----	71854
1	-----	72861
1	-----	74452
109	NGTGACAAAGGACACATGTNTGCTCCTGGTC	155045
241	AGTGACAAAGGACACATGTGTGCTCCTGGTC	156817
97	ACTGTC-----CCTGCCCTGTCCTCA-TTC	619856
1	-----	683480
116	-----ACCCGCCCTCCTC	1291208
271	GGGAAGGCTACTTCAAGGGCCAAGGAGTTG	consensus
85	-----CCA-----CAGAGGGCCAAGGAGTTG	8941
128	GGGAAGGCTACTTCAAGGGCCAAGGAGTTG	10033
22	GGGAAGGCTACTTCAAGGGCCAAGGAGTTG	10644
139	GGGAAGGCTACTTCAAGGGCCAAGGAGTTG	10774
3	-----	71854
1	-----T-----TTC	72861
1	-----	74452
139	GGNAAGNCTACTTCAAGGGCCAAGGAGTTG	155045
271	GGGAAGGCTACTTCAAGGGCCAAGGAGTTG	156817
119	-----CCA-----CAGAGGGCCAAGGAGTTG	619856
1	-----	683480
130	AG-----CTTC-----GTTG	1291208

Figure 2E



301	G	T	G	C	A	C	A	C	C	T	A	C	A	A	G	G	C	T	G	C	A	T	C	A	G	G	T	C	C	consensus	
105	G	T	G	C	A	C	A	C	C	T	A	C	A	A	G	G	C	T	G	C	A	T	C	A	G	G	T	C	C	8941	
158	G	T	G	C	A	C	A	C	C	T	A	C	A	A	G	G	C	T	G	C	A	T	C	A	G	G	T	C	C	10033	
52	G	T	G	C	A	C	A	C	C	T	A	C	A	A	G	G	C	T	G	C	A	T	C	A	G	G	T	N	C	10644	
169	G	T	G	C	A	C	A	C	C	T	A	C	A	A	G	G	C	T	G	C	A	T	C	A	G	G	T	C	C	10774	
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71854		
5	G	T	G	C	A	C	A	C	C	T	A	C	A	A	G	G	C	T	G	C	A	T	C	A	G	G	T	C	C	72861	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74452		
169	G	T	G	C	A	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	155045	
301	G	T	G	C	A	C	A	C	C	T	A	C	A	A	G	G	C	T	G	C	A	T	C	A	G	G	T	C	C	156817	
139	G	T	G	C	A	C	A	C	T	A	C	A	A	G	G	C	T	G	C	A	T	C	A	G	G	T	C	C	C	619856	
5	G	T	G	C	A	C	A	C	C	T	A	C	A	A	G	G	C	T	G	C	A	T	C	A	G	G	T	C	C	683480	
136	-	-	-	-	-	-	-	-	-	-	C	T	A	T	A	A	G	C	T	G	-	-	-	-	-	-	-	-	-	1291208	
331	C	A	G	G	A	C	T	G	C	T	A	C	T	C	C	G	G	C	G	T	T	A	T	A	T	C	C	A	C	C	consensus
135	C	A	G	G	A	C	T	G	C	T	A	C	T	C	C	G	G	C	G	T	T	A	T	A	T	C	N	A	C	C	8941
188	C	A	G	G	A	C	T	G	C	T	A	C	T	C	C	G	G	C	G	T	T	A	T	A	T	C	C	A	C	C	10033
82	C	A	G	G	A	C	T	G	C	T	A	C	T	C	C	G	G	N	G	T	T	A	T	A	T	C	C	A	C	C	10644
199	C	A	G	G	A	C	T	G	C	T	A	C	T	C	C	G	G	C	G	T	T	A	T	A	T	C	C	A	C	C	10774
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71854		
35	C	A	G	G	A	C	T	T	C	T	A	C	T	C	C	G	G	N	G	T	T	A	T	A	T	C	C	A	C	C	72861
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74452		
174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	155045		
331	C	A	G	G	A	C	T	G	C	T	A	C	T	C	C	G	G	C	G	T	T	A	T	A	T	C	C	A	C	C	156817
169	C	A	G	G	A	C	T	G	C	T	A	C	T	N	C	G	G	N	G	T	T	A	T	A	T	C	C	A	C	C	619856
35	C	A	G	G	A	C	T	G	C	T	A	C	T	C	C	G	G	C	G	T	T	A	T	A	T	N	C	A	C	C	683480
148	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1291208	

Figure 2F

361	A C C A T G G G C C C A A G G A C C A C A T G G T A A C C	consensus
165	A C C A T G G G C C C A A G G A C C A C A T G G T A A C C	8941
218	A C C A T G G G C C C A A G G A C C A C A T G G T A A C C	10033
112	A C C A T G G G C C C A A G G A C C A C A T G G T A A C C	10644
229	A C C A T G G G C C C A A G G A C C A C A T G G T A A C C	10774
20	A C C A T G G G C C C A A G G A C C A C A T G G T A A C C	71854
65	A C C A T G G G C C C A A G G A C C A C A T G G T A A C C	72861
20	A C C A T G G G C C C A A G G A C C A C A T G G T A A C C	74452
174		
361	A C C A T G G G C C C A A G G A C C A C A T G G T A A C C	155045
199	A C C A T G G G C C C A A G G A C C A C A T G G T	156817
65	A C C A T G G G N C C C A A G G A C C A C A T G G T A A C C	619856
148	- - - - - G G G A C C A - - G G T A - -	683480
		1291208
391	A G C T C C T T C T G C T G C C A G A G C G A C G G C T G C	consensus
195	A G C T C C T T C T G N T G C C A G A G C G A C G G C T G C	8941
248	A G C T C C T T C T G C T G C - A G A G C G A C G G C T G C	10033
142	A G C T C C T T C T G C T G C C A G A G C G A C G G C T G C	10644
259	A G C T C C T T C T G C T G C C A G A G C G A C G G C T G C	10774
50	A G C T C C T T C T G C T G C C A G A G C G A C G G C T G C	71854
95	A G C T C C T T N T G C T G C C A G A G C G A C G G C T G C	72861
50	A G C T C C T T C T G C T G C C A G A G C G A C G G C T G C	74452
174		
391	A G C T C C T T C T G C T G C C A G A G C G A C G G C T G C	155045
224		156817
95	A G C T C C T T N T G C T G C C A G A G C G A C G N C T G C	619856
159	- - - - - - - - - - - - - - - - - C T G C	683480
		1291208

Figure 2G

421	A	A	C	A	G	T	G	C	C	T	T	T	T	G	T	C	T	G	T	T	C	C	C	T	T	G	A	C	C	consensus	8941
225	A	A	C	A	G	T	G	C	C	T	T	T	T	G	T	C	T	G	T	T	C	C	C	T	T	G	A	C	C		10033
277	A	A	C	A	G	T	G	C	C	T	T	T	T	G	T	C	T	G	T	T	C	C	C	T	T	G	A	C	C		10644
172	A	A	C	A	G	T	G	C	C	T	T	T	T	G	T	C	T	G	T	T	C	C	C	T	T	G	A	C	C		10774
289	A	A	C	A	G	T	G	C	C	T	T	T	T	G	T	C	T	G	T	T	C	C	C	T	T	G	A	C	C		71854
80	A	A	C	A	N	T	G	C	C	T	T	T	T	N	T	N	T	G	T	T	C	C	C	T	T	G	A	C	C		72861
125	A	A	C	A	T	G	C	C	T	T	T	T	T	N	T	N	T	G	T	T	C	C	C	T	T	G	A	C	C		74452
80	A	A	C	A	N	T	G	C	C	T	T	T	T	N	T	N	T	G	T	T	C	C	C	T	T	G	A	C	C		155045
174																														156817	
421	A	A	C	A	G	T	G	C	C	T	T	T	T	G	T	C	T	G	T	T	C	C	C	T	T	G	A	C	C		619856
224																														683480	
125	A	A	C	A	G	T	G	C	C	T	T	T	T	G	T	C	T	G	T	T	C	C	C	T	T	G	A	C	C		1291208
163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
451	A	A	T	C	T	T	A	C	T	G	A	G	A	A	T	G	G	C	C	T	G	A	T	G	T	G	C	C	C	consensus	8941
255	A	A	T	C	T	T	A	C	T	G	A	G	A	A	T	G	G	C	C	T	G	A	T	G	T	G	C	C	C		10033
307	A	A	T	C	T	T	A	C	T	G	A	G	A	A	T	G	G	C	C	T	G	A	T	G	T	G	C	C	C		10644
202	A	A	T	C	T	T	A	C	T	G	A	G	A	A	T	N	G	N	C	T	G	A	T	G	T	G	C	C	C		10774
319	A	A	T	C	T	T	A	C	T	G	A	G	A	A	T	G	G	C	C	T	G	A	T	G	T	G	C	C	C		71854
110	A	A	T	C	T	T	A	C	T	G	A	G	A	A	T	G	G	C	C	T	G	A	T	G	T	G	C	C	C		72861
151																														74452	
110	A	A	T	C	T	T	A	C	T	G	A	G	A	A	T	G	G	C	C	T	G	A	T	G	T	G	C	C	C		155045
174																														156817	
451	A	A	T	C	T	T	A	C	T	G	A	G	A	A	T	G	G	C	C	T	G	A	T	G	T	G	C	C	C		619856
224																														683480	
155	A	A	T	C	T	T	A	C	T	G	A	G	A	A	T	G	G	C	C	T	G	A	T	G	T	G	C	C	C		1291208
163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			

Figure 2H

481	G C C T G C A C T G C G A G C T T C A G G G A C A A T G C	consensus
285	G C - T G C A C T G C G A G T T T N A G G G N C A A - -	8941
324		10033
232	G N C T G C A C T G N G A G C T T C A G G G A C A A T G C	10644
349	G C C T G C A C T G C G A G C T T C A G G G A C A A T G C	10774
140	G C C T G C A C T G C G A G C T T C A G G G A C A A T G C	71854
151		72861
140	G C C T G C A C T G C G A G C T T C A G G G A C A A T G C	74452
174		155045
481	G C C T G C A C T G C G A G C T T C A G G G A C A A T G C	156817
224		619856
185	G N C T G C A C T G C G A G C T T N A G G G A C A A T G C	683480
171	- - - A C A C - - - - - - - - - - - - - - - C	1291208
511	A T G G G G C C C A T G A C C C A C T G T A C T G G A A A G	consensus
311	- - - - A T N C A T G - - - - - - - - - - - - - -	8941
324		10033
262	- -	10644
379	A T G G G G C C C A T G A C C C A C T G T A C T G G A A A G	10774
170	A T G G G G C C C A T G A C C C	71854
151		72861
170	A T G G G G C C C A T G A C C C - - - - - C A G G A - -	74452
174		155045
511	A T G G G G C C C A T G A C C C C A C T G T A C T G G A A A G	156817
224		619856
215	A T G G G G C C C A T G A C C C A C T G T A C T G G A A A G	683480
176	A T G A G G C T C - - - - T C C A - - - - - - - - - -	1291208

Figure 2I

541	G A A A C C A C T G C G T C T C C T T A T C T G G A C A C	consensus
318	- - - - -	8941
324	- - - - -	10033
262	- - - - -	10644
409	G A A A C C A C T G C G T C T C C T T A T G T G G A C A C	10774
185	- - - - -	71854
151	- - - - -	72861
191	- - - - - C T G C - - - - -	74452
174	- - - - -	155045
541	G A A A C C A C T G C G T C T C C T T A T C T G G A C A C	156817
224	- - - - -	619856
245	G A A A C C A	683480
189	G G A G A C C A - - - - -	1291208
	- - - - - G A G A C	
571	G T G C A G G C T G G T A T T T C A A C C C A G A T T	consensus
318	- - - - -	8941
324	- - - - -	10033
262	- - - - -	10644
439	G T G C A T G C T G G T A T T T C A A C C C A G A T T	10774
185	- - - - -	71854
151	- - - - -	72861
195	- - - - - T A C T C - - - - -	74452
174	- - - - -	155045
571	G T G C A G G C T G G T A T T T C A A C C C A G A T T	156817
224	- - - - -	619856
252	- - - - -	683480
202	- - - - - C T T T C - - - - - T	1291208

Figure 2J

601	G C T A T G C G G G C C T G T G C T A C A G A G T A T G	consensus
318	- - - - - G G G G - - - - - - - - - - - - - - -	8941
324		10033
262	- -	10644
469	G C T A T G C G G G C C T G T G C T A C A G A G T A T G	10774
185		71854
151		72861
200	- - - - - C G G N G T T A T A - - - - - - - - - - -	74452
174		155045
601	G C T A T G C G G G C C T G T G C T A C A G A G T A T G	156817
224		619856
252		683480
208	G C T - - - - - G G C - - - - - - - - - - - - - - -	1291208
631	T G C C T T T A C C A A G C C C T G G T G C T G A A G T A C C C	consensus
322	- -	8941
324		10033
262		10644
499	T G C C T T T A C C A A G C C C T G G T G C T G A A G T A C C C	10774
185		71854
151		72861
210	- - - - - T C C A C C A - - - - - - - - - - - - - - - C C	74452
174		155045
631	T G C C T T T A C C A A G C C C T G G T G C T G A A G T A C C C	156817
224		619856
252		683480
214	- - - C T T T - - - - - - - - - - - G T G T T G - - - - -	1291208

Figure 2K

661	A	C	A	G	G	C	A	C	C	A	A	T	G	T	C	C	T	C	T	C	T	C	C	A	T	C	A	T	consensus	
322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8941		
324																												10033		
262																												10644		
529	A	C	A	G	G	C	A	C	C	A	A	T	G	T	C	C	T	C	T	C	T	C	C	A	T	C	A	T	10774	
185																												71854		
151																												72861		
219	A	T	G	G	G	C	C	C	A	A	G	G	-	-	-	-	-	-	-	-	-	-	-	-	A	C	C	A	74452	
174																												155045		
661	A	C	A	G	G	C	A	C	C	A	A	T	G	T	C	C	T	C	T	C	T	C	C	A	T	C	A	T	156817	
224																												619856		
252																												683480		
224	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1291208		
691	A	T	A	G	A	G	T	G	C	A	C	T	C	A	C	T	C	C	C	C	T	G	A	A	A	G	C	T	consensus	
322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8941		
324																												10033		
262																												10644		
559	A	T	A	G	A	G	T	G	C	A	C	T	C	A	C	T	C	C	C	C	T	G	A	A	A	G	C	T	10774	
185																												71854		
151																												72861		
237	A	T	G	-	-	G	T	A	-	A	C	C	A	G	C	T	C	C	T	T	C	T	G	-	-	-	-	C	T	74452
174																												155045		
691	A	T	A	G	A	G	T	G	C	A	C	T	C	A	C	T	C	C	C	C	T	G	A	A	A	G	C	T	156817	
224																												619856		
252																												683480		
227	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1291208		

Figure 2L

721	A T C T G A A C A G A G G A A G A T A A T G T A G T G T G A	consensus
322	- - - - -	8941
324		10033
262		10644
589	A T C T G A A C A G A G G A A G A T A A T G T A G T G T G A	10774
185		71854
151		72861
259	G C C A G A G C N A C G G C - - - - - T G C A A C - - - -	74452
174		155045
721	A T C T G A A C A G A G G A A G A T A A T G T A G T G T G A	156817
224		619856
252		683480
241	- - - - -	1291208
751	A G T C C C C A T T T G T C C T C A G C C T G T A A C T T C	consensus
322	- - - - C C C A T T	8941
324		10033
262		10644
619	A G T C C C C A T T T G T T C C T A G N C T G T A A C T T C	10774
185		71854
151		72861
279	A N T G C C - - T T T N T - - - - G T C T G T N - - - - C	74452
174		155045
751	A G T C C C C A T T T G T C C T C A G C C T G T A A C T T C	156817
224		619856
252		683480
241	- - - - - T C T T G G - - - - -	1291208

Figure 2M



781	C C C G T G T G - C C T A T A A G A A G T T A A T A G A G	consensus
327		8941
324		10033
262		10644
649	C C - G T G T G G C C T A T A A N G A A G T T A A T N G N G	10774
185		71854
151		72861
298	C C T - - - T G A C C - - - - A A T C T N A C T G A G	74452
174		155045
781	C C C G T G T G - C C T A T A A G A A G T T A A T A G A G	156817
224		619856
252		683480
247	- - - G T G C	1291208
810	C A C T C G A G	consensus
327		8941
324		10033
262		10644
678	C A A N N A N A A G A A A A A A	10774
185		71854
151		72861
318	- - - - - - - - - - A A T N G C C T G A T T	74452
174		155045
810	C A C T C G A G	156817
224		619856
252		683480
250		1291208

Figure 2N

1 MR L S R R P E T F L L A F V L L C T L L G L G C P L H C E GIPL aa  
1 M K - - - - - Y L H T I C L L F I F V A R G N S R S C D CNF aa

31 I C T A A G S R C H G Q M K T C S S D K D T C V L L V G K A GIPL aa  
24 F C H N I G K D C D G Y E E E C S S P E D V C G K V L L E I CNF aa

61 T S K G K E L V H T Y K G C I R S Q D C Y S G V I S T T M G GIPL aa  
54 S A S L S V R T V H K N C F S S I C K L G Q F D V N I G CNF aa

91 P K D H M V T S S F C C Q S D G C N S - A F L S V P L T N L GIPL aa  
84 H H S Y I R G R I N C C E K E L C E D Q P F P G L P L S K - CNF aa

120 T E N G L M C P A C T A S F R D K C M G P M T H C T G K E N GIPL aa  
113 - P N G Y Y C P G A I G L F T K D S T E Y E A I C K G T E T CNF aa

150 H C V S L S G H V Q A G I F K P - - R F A M R G C A T E S M GIPL aa  
142 K C I N I V G H - R Y E Q F P G D I S Y N L K G C V S S - - CNF aa

178 C F T K P G A E V P T G T N V L F L H H I E C T H S P GIPL aa  
169 C P L L S L S N A T F E Q N R N Y L E K V E C K D A I R L A CNF aa

204  
199 S L  
GIPL aa  
CNF aa

Figure 3

T09090" 02554860

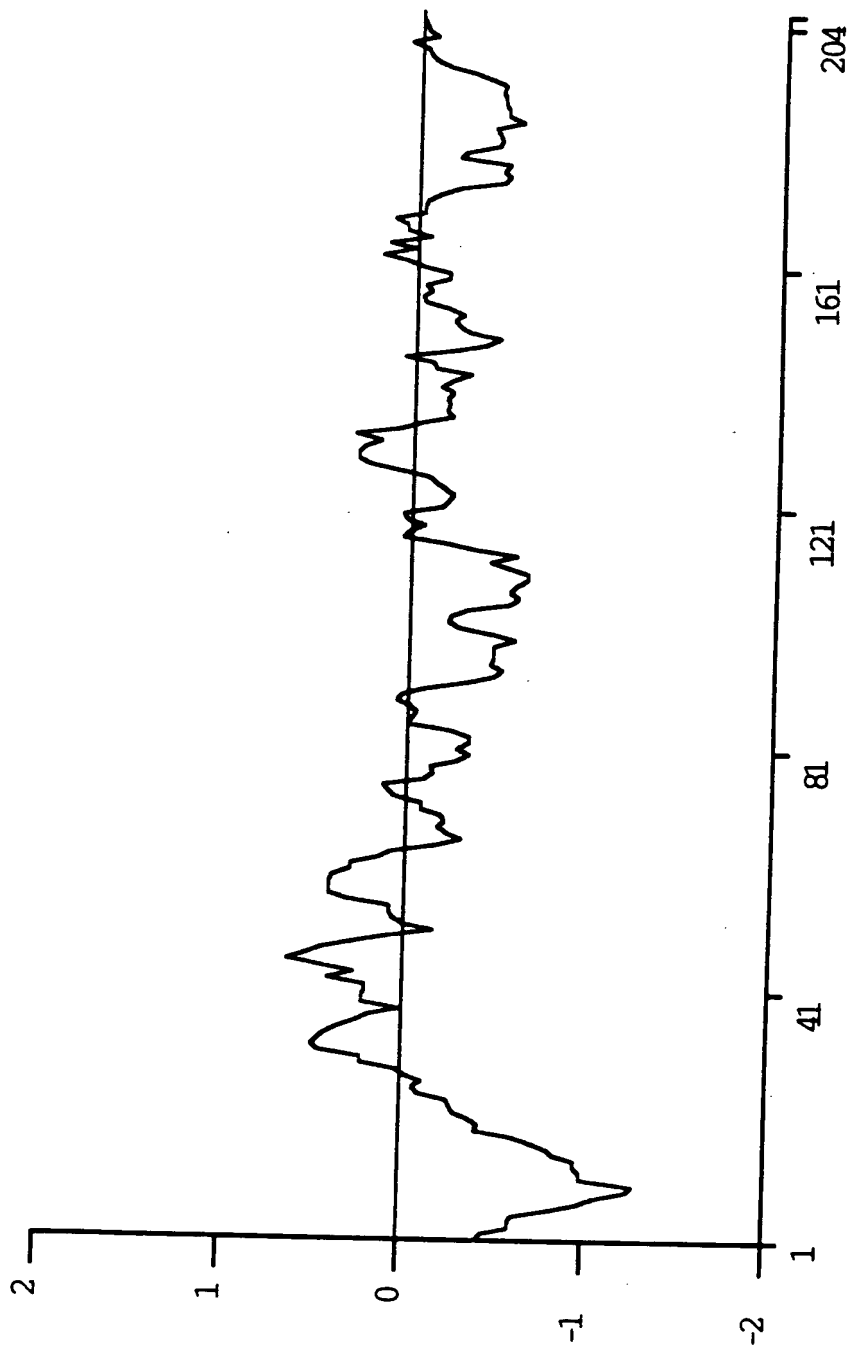


FIGURE 4

FO9090" 0255/860

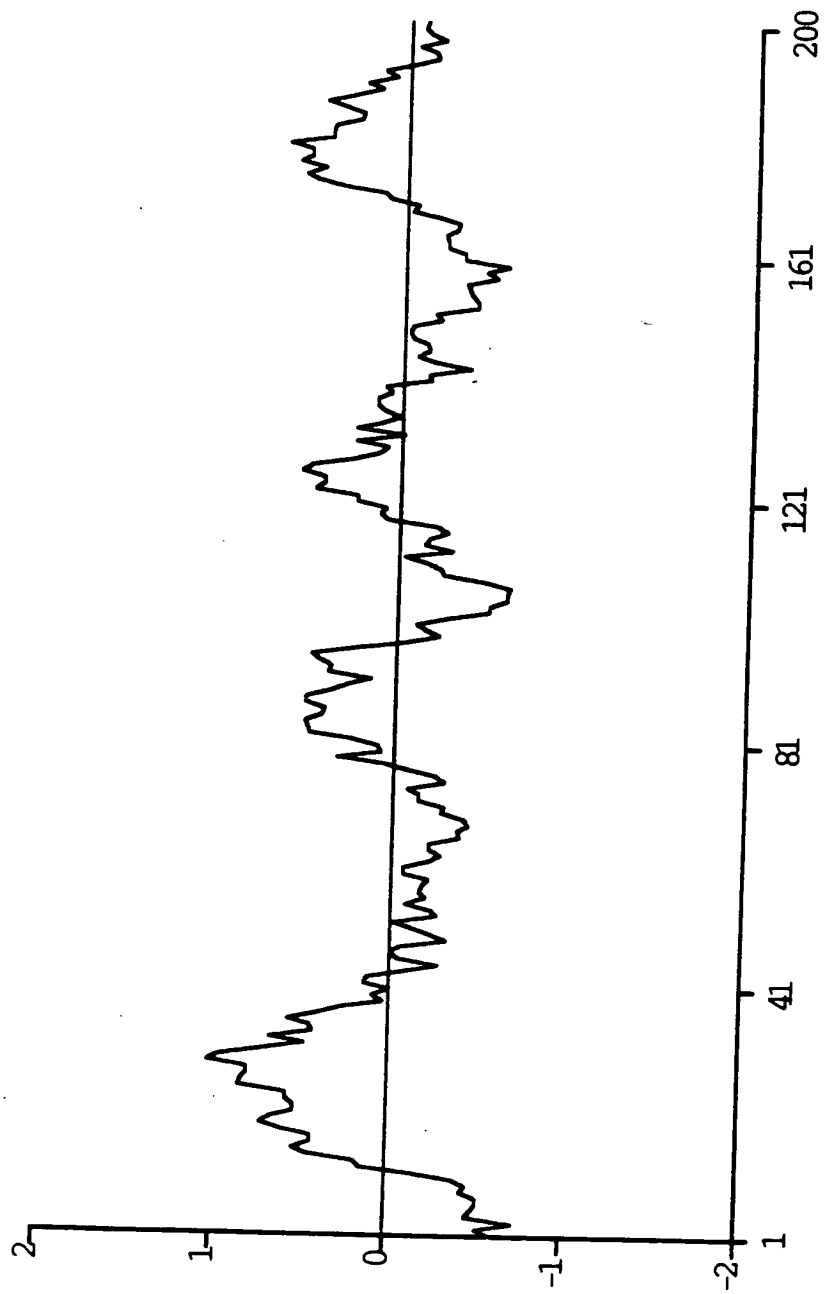


FIGURE 5

T09090" 02552860

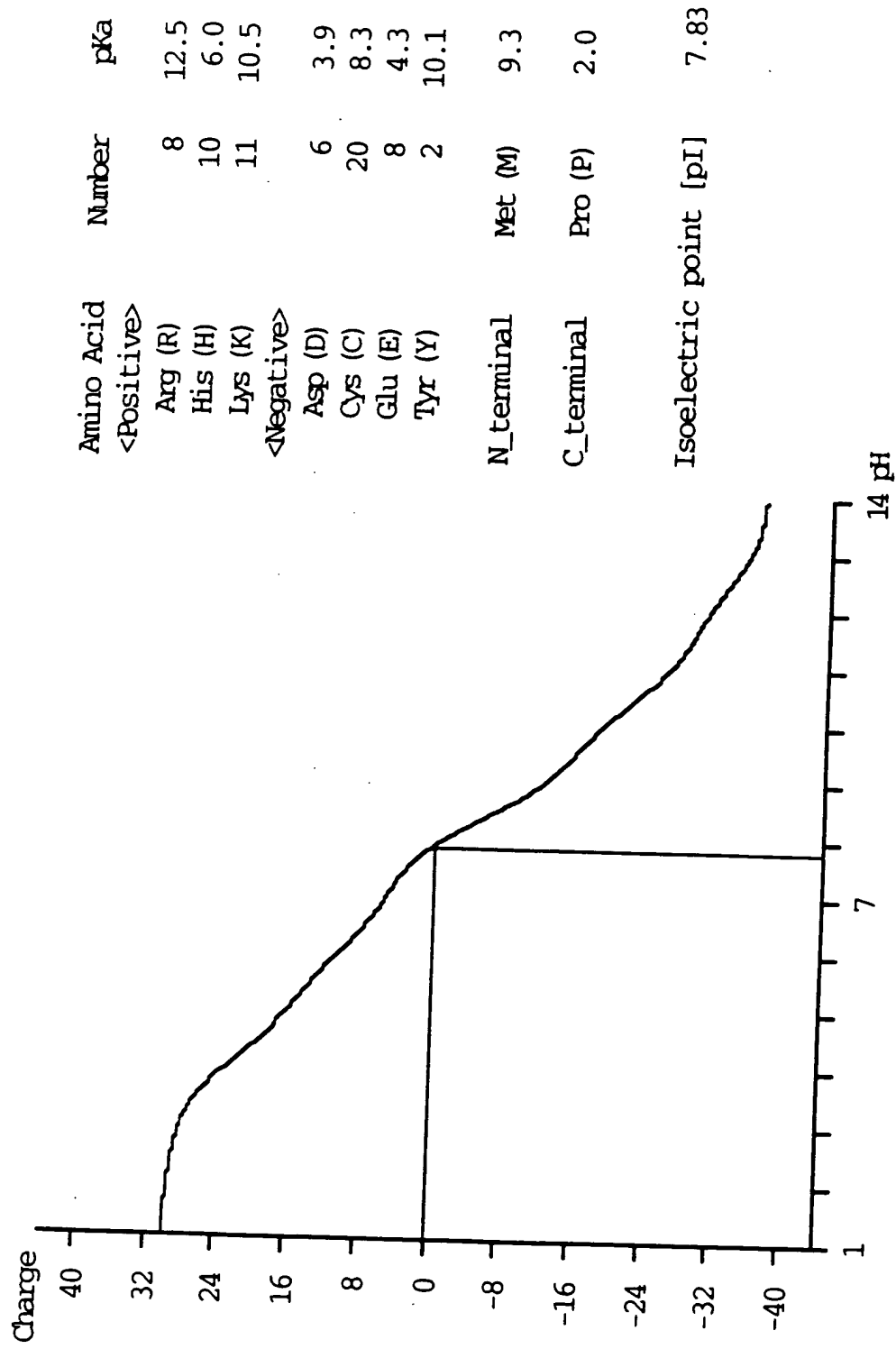


FIGURE 6

FO9090-02554860

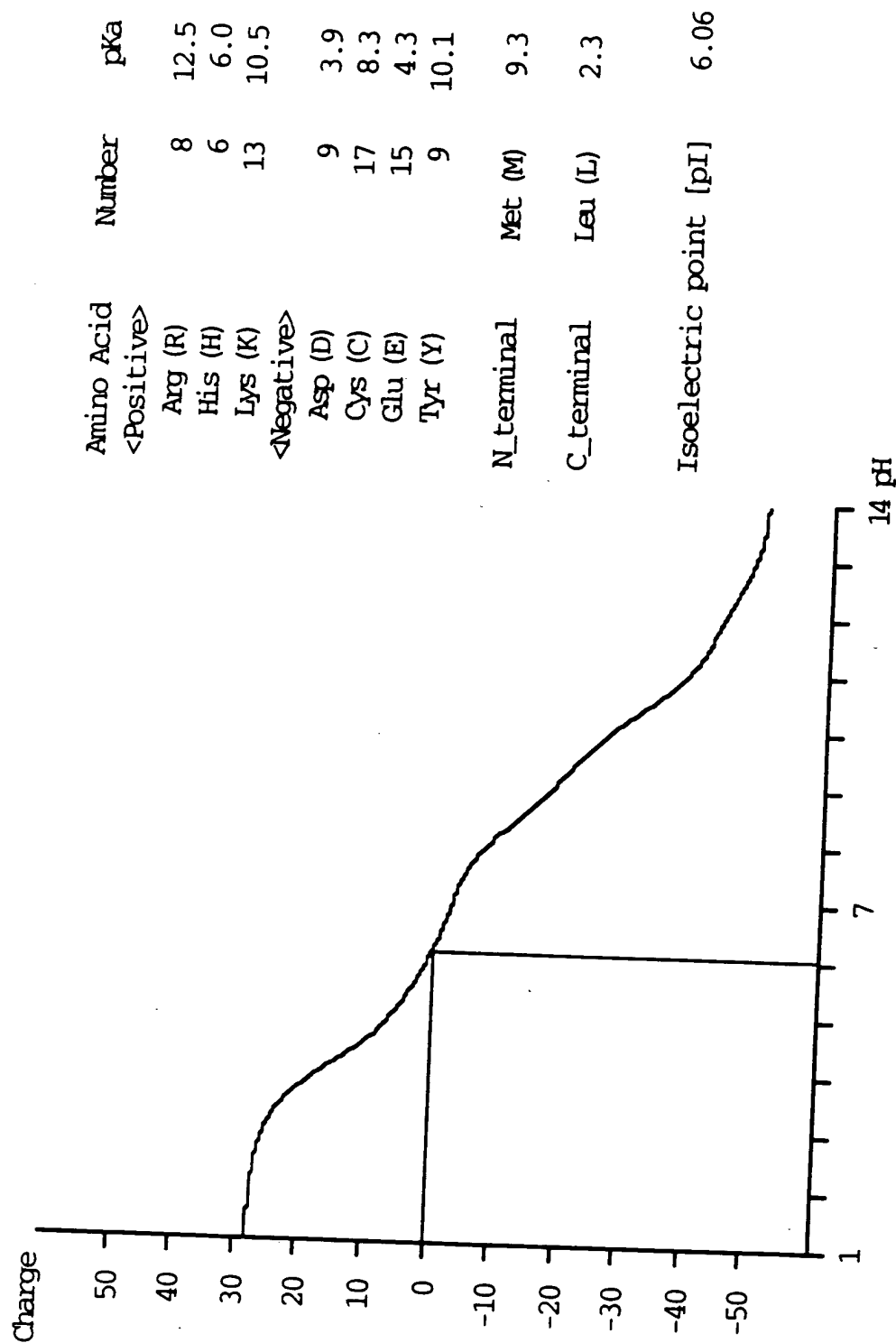


FIGURE 7

00071550-060601

5' NCA ATG GGC GGG CCG TGG GAA GGG TGA ATG TGG GTC CAG ACC CGC CCC TCC TCA  
 9 18 27 36 45 54  
 GGT TCC TAT AAA AGC TGG GGA CCA GGT ACT GGT GAT ACA CAC ACC ATG AGG CTC  
 53 72 81 90 99 108  
 M R L  
 TCC AGG AGA CCA GAG ACC TTT CTG CTG GCC TTT GTG TTG CTC TGC ACC CTC CTC  
 117 126 135 144 153 162  
 S R R P E T F L L A F V L L C T L L  
 GGT CTT GGG TGC CCA CTA CAC TGC GAA ATA TGT ACG GCG GCG GGG AGC AGG TGC  
 171 180 189 198 207 216  
 G L G C P L H C E I C T A A G S R C  
 CAT GGC CAA ATG AAG ACC TGC AGC AGT GAC AAG GAC ACA TGT GTG CTC CTC GTC  
 225 234 243 252 261 270  
 H G Q M K T C S S D K D T C V L L V  
 GGG AAG GGT ACT TCA AAG GGC AAG GAG TTG GTG CAC ACC TAC AAG GGC TGC ATC  
 279 288 297 306 315 324  
 G K A T S K G K E L V H T Y K G C I  
 AGG TCC CAG GAC TGC TAC TCC GGC GTT ATA TCC ACC ACC ATG GGC CCC AAG GAC  
 333 342 351 360 369 378  
 R S Q D C Y S G V I S T T M G P K D  
 CAC ATG GTA ACC AGC TCC TTC TGC TGC CAG AGC GAC GGC TGC AAC AGT GCC TTT  
 387 396 405 414 423 432  
 H M V T S S F C C Q S D G C N S A F  
 TTG TCT GTT CCC TTG ACC AAT CTT 459 GAG AAT GGC CTG ATG TGC CCC GCC TGC  
 441 450 459 468 477 486  
 L S V P L T N L T E N G L M C P A C  
 ACT GCG AGC TTC AGG GAC AAA TGC ATG GGG CCC ATG ACC CAC TGT ACT GGA AAG  
 495 504 513 522 531 540  
 T A S F R D K C M G P M T H C T G K

FIGURE 1A

GAA	AAC	549	CAC	TGC	GTC	558	TCA	TCT	GGA	CAC	567	GTG	CAG	GCT	GGT	585	ATT	TTC	AAA	594	CCC
E	N		H	C	V	S	L	S	G	H		V	Q	A	G	I	F	K		P	
AGA	TTT	603	GCT	ATG	CGG	612	GGC	TGT	GCT	ACA	621	GAG	AGT	ATG	TGC	630	TTT	ACC	AAG	639	CCT
R	F		A	M	R	G	C	A	T	E		S	M	C	F	T	K	P		G	
GCT	GAA	657	GTA	CCC	ACA	666	GGC	ACC	AAT	GTC	675	CTC	TTC	CTC	CAT	684	CAT	ATA	GAG	693	TGC
A	E		V	P	T	G	T	N	V	L		F	L	H	H	I	E	C		T	
CAC	TCC	711	CCC	TGA	AAA	720	GCT	ATC	TGA	ACA	729	GAG	GAA	GAT	AAT	738	GTA	GTG	747	TGA	
H	S		P																	AGT	
CAT	TTG	765	TCC	TCA	GCC	774	TGT	AAC	TTC	CCC	783	GTG	TGC	CTA	TAA	792	AGA	AGT	801	TAA	
																				TAG	
AAA	AAA	819	AAA	AAA	AAA	828	AAA	AAA	AAC	837	TCG	AG	3'								

FIGURE 1B



09875520.060601

1	N	C	A	A	T	G	G	G	C	C	G	G	C	C	G	T	G	G	G	A	A	G	G	G	T	G	A	A	T	G	consensus
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8941
1	G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10033
1	G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10644
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10774
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71354
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72861
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74452
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	N	T	G	G	-	-	-	-	-	-	-	-	-	-	155045
1	N	C	A	A	T	G	G	G	C	C	G	G	C	C	G	T	G	G	G	A	A	G	G	G	T	G	A	A	T	G	156817
1	A	G	A	A	A	G	A	G	A	C	C	A	T	N	C	C	A	G	G	A	A	-	-	G	T	-	-	-	T	G	619856
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	683480
1	G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	G	G	A	A	-	-	-	-	-	-	-	-	-	1291208
31	T	G	G	G	T	C	C	A	G	A	C	C	C	G	C	C	C	T	C	C	T	C	A	G	C	T	T	C	C	consensus	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8941
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10033
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10644
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10774
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71854
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72861
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74452
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	C	T	T	A	G	T	T	T	-	-	-	155045
31	T	G	G	G	T	C	C	A	G	A	C	C	C	G	C	C	C	T	C	C	T	C	A	G	C	T	T	C	C	156817	
25	T	G	G	G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	619856
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	683480
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	C	C	C	A	G	-	T	T	C	T	1291208	
51	T	A	T	A	A	A	A	G	C	T	G	G	G	G	A	C	C	A	G	G	T	A	C	T	G	C	T	G	A	T	consensus
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	G	G	A	-	-	-	G	G	-	-	-	-	-	-	-	8941
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10033
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10644
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10774
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71854
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72861
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74452
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	155045
51	T	A	T	A	A	A	A	G	C	T	G	G	G	G	A	C	C	A	G	G	T	A	C	T	G	C	T	G	A	T	156817
30	-	-	-	-	-	-	-	-	G	T	T	G	G	G	G	A	-	-	-	G	G	-	-	-	-	-	-	-	-	-	619856
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	683480
15	T	G	C	A	G	C	C	A	C	T	G	G	G	A	A	T	C	A	A	G	-	-	-	-	-	-	-	-	-	-	1291208

FIGURE 2A

092520 060604

91	A C A C A C A C C A T G A G G C T C T C C A G G A G A C C A	consensus
6	- - - - - C C T A G G G T T - - - - - A G G C - -	8941
2	- -	10033
2	- -	10644
1	- -	10774
1	- -	71854
1	- -	72861
1	- -	74452
15	- -	155045
91	A C A C A C A C C A T G A G G C T C T C C A G G A G A C C A	156817
40	- - - - - C C T A G G G T T - - - - - A G G C - -	619856
1	- -	683480
36	- - - - - - - - - - - - - - - - - A G G C C C	1291208

FIGURE 2B

121	G A G A C C T T T C T G C T G G C C T T T G T G T T G C T C	consensus
19	A A G A C C T T -	8941
2	- -	10033
2	- -	10644
1	- -	10774
1	- -	71854
1	- -	72861
1	- -	74452
15	- -	155045
121	G A G A C C T T T C T G C T G G C C T T T G T G T T G C T C	156817
53	A A G A C C T T -	619856
1	- -	683480
42	A A - C T C	1291208
151	T G C A C C C T C C T G G G T C T T G G G T G C C C A C T A	consensus
27	- - - - - - - - - - - - G A G G C A G G G G T - - - - - - - -	8941
8	T N C A C C C T C C T G G G T C T T G G G T G C C C A C T A	10033
2	- -	10644
19	T G C A C C C T C C T G G G T C T T G G G T G C C C A C T A	10774
3	- -	71854
1	- -	72861
1	- -	74452
20	T - C A C C C T C C N G G G T C T N G G G T G C C C A C N A	155045
151	T G C A C C C T C C T G G G T C T T G G G T G C C C A C T A	156817
61	- - - - - - - - - - - - G A G G C A G G G G T - - - - - - - -	619856
1	- -	683480
47	C G - - - - - T C T T G - G T C T T N N N N N N N N N N N N	1291208
181	C A C T G C G A A A T A T G T A C G G C G G C G G G G G A G C	consensus
38	- - - - - T G A A G C - - - - - - - - - - - C A G G G A G -	8941
38	C A C T G C G A A A T A T G T A C G G C G G C G G G G A G C	10033
2	- -	10644
49	C A C T G C G A A A T A T G T A C G G C G G C G G G G A G C	10774
3	- -	71854
1	- -	72861
1	- -	74452
49	C A C T G C G A A N T A T G T A C G G C G G C G G G T A G C	155045
181	C A C T G C G A A A T A T G T A C G G C G G C G G G G A G C	156817
72	- - - - - T G A A G C - - - - - - - - - - - C A G G G A G -	619856
1	- -	683480
71	N N N N N N N C A A T G G G C - C G G C C G T G G G A A G -	1291208

**FIGURE 2C**

09875520.06060.1

211	A G G T G C C A T G G C C A A A T G A A G A C C T G C A G C	consensus
51	- - - - - T G G T C A G C - - - - - C A G C	8941
68	A G G T G C C A T G G C C A A A T G A A G A C C T G C A G C	10033
2	- -	10644
79	A G G T G C C A T G G C C A A A T G A A G A C C T G C A G C	10774
3	- -	71854
1	- -	72861
1	- -	74452
79	A G G T T C C A T G N C C A A A T N A A G A N C T T C A N C	155045
211	A G G T G C C A T G G C C A A A T G A A G A C C T G C A G C	156817
85	- - - - - T G G T C A G C - - - - - C A G C	619856
1	- -	683480
99	- G G T G - - - - - A A T G T G G G T C - - C A G -	1291208

FIGURE 2D

241	A	G	T	G	A	C	A	A	G	G	A	C	A	C	A	T	G	T	G	T	G	C	T	C	C	T	G	G	T	C	consensus			
53	A	C	T	G	T	C	-	-	-	-	-	-	-	-	-	C	C	T	G	C	C	T	G	T	C	C	C	C	A	-	T	C	8941	
98	A	G	T	G	A	C	A	A	G	G	A	C	A	C	A	T	G	T	G	T	G	C	T	C	C	C	T	G	G	T	C	10033		
2	-	-	-	-	-	-	-	-	-	-	-	A	C	A	C	A	T	G	T	G	T	N	C	T	C	C	T	G	G	T	C	10644		
109	A	G	T	G	A	C	A	A	G	G	A	C	A	C	A	T	G	T	G	T	G	C	T	C	C	C	T	G	G	T	C	10774		
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71854		
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72861		
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74452		
109	N	G	T	G	A	C	A	A	G	G	A	C	A	C	A	T	G	T	N	T	G	C	T	C	C	T	G	G	T	C	155045			
241	A	G	T	G	A	C	A	A	G	G	A	C	A	C	A	T	G	T	G	T	G	C	T	C	C	T	G	G	T	C	156817			
97	A	C	T	G	T	C	-	-	-	-	-	-	-	-	-	C	C	T	G	C	C	T	G	T	C	C	C	C	A	-	T	C	619856	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	683480		
115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	C	C	C	G	C	C	C	C	T	C	C	T	C	1291208
271	G	G	G	A	A	G	G	C	T	A	C	T	T	C	A	A	A	G	G	G	C	A	A	G	G	A	G	T	T	G	consensus			
85	-	-	-	-	-	-	-	C	C	A	-	-	-	-	-	C	A	G	A	G	G	G	C	A	A	G	G	A	G	T	T	G	8941	
128	G	G	G	A	A	G	G	C	T	A	C	T	T	C	A	A	A	G	G	G	C	A	A	G	G	A	G	T	T	G	10033			
22	G	G	G	A	A	G	G	C	T	A	C	T	T	C	A	A	A	G	G	G	C	A	A	G	G	A	G	T	T	G	10644			
139	G	G	G	A	A	G	G	C	T	A	C	T	T	C	A	A	A	G	G	G	C	A	A	G	G	A	G	T	T	G	10774			
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71854		
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72861		
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74452		
139	G	G	N	A	A	G	N	C	T	A	C	T	T	C	A	A	A	G	G	G	C	A	A	G	G	A	G	T	T	G	155045			
271	G	G	G	A	A	G	G	C	T	A	C	T	T	C	A	A	A	G	G	G	C	A	A	G	G	A	G	T	T	G	156817			
119	-	-	-	-	-	-	-	C	C	A	-	-	-	-	-	-	C	A	G	A	G	G	G	C	A	A	G	G	A	G	T	T	G	619856
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	683480		
130	A	G	-	-	-	-	-	-	-	-	-	C	T	T	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1291208	
301	G	T	G	C	A	C	A	C	C	T	A	C	A	A	A	G	G	G	C	T	G	C	A	T	C	A	G	G	T	C	C	consensus		
105	G	T	G	C	A	C	A	C	C	T	A	C	A	A	A	G	G	G	C	T	G	C	A	T	C	A	G	G	T	C	C	8941		
158	G	T	G	C	A	C	A	C	C	T	A	C	A	A	A	G	G	G	C	T	G	C	A	T	C	A	G	G	T	C	C	10033		
52	G	T	G	C	A	C	A	C	C	T	A	C	A	A	A	G	G	G	C	T	G	C	A	T	C	A	G	G	T	N	C	10644		
159	G	T	G	C	A	C	A	C	C	T	A	C	A	A	A	G	G	G	C	T	G	C	A	T	C	A	G	G	T	C	C	10774		
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71854		
5	G	T	G	C	A	C	A	C	C	T	A	C	A	A	A	G	G	G	C	T	G	C	A	T	C	A	G	G	T	C	C	72861		
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74452		
159	G	T	G	C	A	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	155045		
301	G	T	G	C	A	C	A	C	C	T	A	C	A	A	A	G	G	G	C	T	G	C	A	T	C	A	G	G	T	C	C	156817		
139	G	T	G	C	A	C	A	A	C	T	A	C	A	A	A	G	G	G	C	T	G	C	A	T	C	A	G	G	T	C	C	619856		
5	G	T	G	C	A	C	A	C	C	T	A	C	A	A	A	G	G	G	C	T	G	C	A	T	C	A	G	G	T	C	C	683480		
136	-	-	-	-	-	-	-	-	-	-	-	C	T	A	T	A	A	A	A	G	C	T	G	-	-	-	-	-	-	-	-	1291208		

FIGURE 2E

331	C A G G A C T G C T A C T C C G G C G T T A T A T C C A C C	
135	C A G G A C T G C T A C T C C G G C G T T A T A T C C A C C	consensus
188	C A G G A C T G C T A C T C C G G C G T T A T A T C N A C C	8941
82	C A G G A C T G C T A C T C C G G C G T T A T A T C C A C C	10033
199	C A G G A C T G C T A C T C C G G C G T T A T A T C C A C C	10644
3	- - - - - - - - - - C C G G C G T T A T A T C C A C C	10774
35	C A G G A C T T C T A C T C C G G C G T T A T A T C C A C C	71854
1	- - - - - - - - - - C T C C G G C G T T A T A T C C A C C	72861
174	- - - - - - - - - - C T C C G G C G T T A T A T C C A C C	74452
331	C A G G A C T G C T A C T C C G G C G T T A T A T C C A C C	155045
169	C A G G A C T G C T A C T N C G G C G T T A T A T C C A C C	156817
35	C A G G A C T G C T A C T C C G G C G T T A T A T C C A C C	619856
148	- -	683480
		1291208

**FIGURE 2F**

361	A C C A T G G G C C C C A A G G A C C A C A T G G T A A C C	consensus
165	A C C A T G G G C C C C A A G G A C C A C A T G G T A A C C	8941
218	A C C A T G G G C C C C A A G G A C C A C A T G G T A A C C	10033
112	A C C A T G G G C C C C A A G G A C C A C A T G G T A A C C	10644
229	A C C A T G G G C C C C A A G G A C C A C A T G G T A A C C	10774
20	A C C A T G G G C C C C A A G G A C C A C A T G G T A A C C	71854
65	A C C A T G G G C C C C A A G G A C C A C A T G G T A A C C	72861
20	A C C A T G G G C C C C A A G G A C C A C A T G G T A A C C	74452
174		155045
361	A C C A T G G G C C C C A A G G A C C A C A T G G T A A C C	156817
199	A C C A T G G G C C C C A A G G A C C A C A T G G T	619856
65	A C C A T G G G N C C C A A G G A C C A C A T G G T A A C C	683480
148	- - - - - G G G A C C A - - - G G T A - - -	1291208
391	A G C T C C T T C T G C T G C C A G A G C G A C G G C T G C	consensus
195	A G C T C C T T C T G N T G C C A G A G C G A C G G C T G C	8941
248	A G C T C C T T C T G C T G C - A G A G C G A C G G C T G C	10033
142	A G C T C C T T C T G C T G C C A G A G C G A C G G C T G C	10644
259	A G C T C C T T C T G C T G C C A G A G C G A C G G C T G C	10774
50	A G C T C C T T C T G C T G C C A G A G C G A C G G C T G C	71854
95	A G C T C C T T N T G C T G C C A G A G C G A C G G C T G C	72861
50	A G C T C C T T C T G C T G C C A G A G C G A C G G C T G C	74452
174		155045
391	A G C T C C T T C T G C T G C C A G A G C G A C G G C T G C	156817
224		619856
95	A G C T C C T T N T G C T G C C A G A G C G A C G N C T G C	683480
159	- - - - - C T G C	1291208
421	A A C A G T G C C T T T T T G T C T G T T C C C T T G A C C	consensus
225	A A C A G T G C C T T T T T G T C T G T T C C C T T G A C C	8941
277	A A C A G T G C C T T T T T G T C T G T T C C C T T G A C C	10033
172	A A C A G T G C C T T T T T G T C T G T T C C C T T G A C C	10644
289	A A C A G T G C C T T T T T G T C T G T T C C C T T G A C C	10774
80	A A C A N T G C C T T T T T N T N T G T T C C C T T G A C C	71854
125	A A C A T T G C C T T T T T N T N T G T N C C C T T G	72861
80	A A C A N T G C C T T T T T N T N T G T T C C C T T G A C C	74452
174		155045
421	A A C A G T G C C T T T T T G T C T G T T C C C T T G A C C	156817
224		619856
125	A A C A G T G C C T T T T T G T C T G T T C C C T T G A C C	683480
163	- - - - -	1291208

FIGURE 2G

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451	A A T C T T A C T G A G A A T G G C C T G A T G T G C C C C	consensus
255	A A T C T T A C T G A G A A T G G C C T G A T G T G C C C N	8941
307	A A T C T T A C T G A G A A T G G T	10033
202	A A T N T T A C T G A G A A T N G N C T G A T G T G C C C C	10644
319	A A T C T T A C T G A G A A T G G C C T G A T G T G C C C C	10774
110	A A T C T T A C T G A G A A T G G C C T G A T G T G C C C C	71854
151		72861
110	A A T C T T A C T G A G A A T G G C C T G A T G T G C C C C	74452
174		155045
451	A A T C T T A C T G A G A A T G G C C T G A T G T G C C C C	156817
224		619856
155	A A T C T T A C T G A G A A T G G C C T G A T G T G C C C C	683480
153	- - - - - - - - - - - - - - - T G A T A C A C - - -	1291208

FIGURE 2H



431	G C C T G C A C T G C G A G C T T C A G G G A C A A A T G C	consensus
235	G C - T G C A C T G C G A G T T T N A G G G N C A A A - - -	8941
324		10033
232	G N C T G C A C T G N G A G C T T C A G G G A C A A A T G C	10644
349	G C C T G C A C T G C G A G C T T C A G G G A C A A A T G C	10774
140	G C C T G C A C T G C G A G C T T C A G G G A C A A A T G C	71854
151		72861
140	G C C T G C A C T G C G A G C T T C A G G G A C A A A T G C	74452
174		155045
481	G C C T G C A C T G C G A G C T T C A G G G A C A A A T G C	156817
224		619856
185	G N C T G C A C T G C G A G C T T N A G G G A C A A A T G C	683480
171	- - - - A C A C - - - - - - - - - - - - - - - - - C	1291208
511	A T G G G G C C C A T G A C C C A C T G T A C T G G A A A G	consensus
311	- - - - - A T N C A T G - - - - - - - - - - - - - - - - -	8941
324		10033
262	- -	10644
379	A T G G G G C C C A T G A C C C A C T G T A C T G G A A A G	10774
170	A T G G G G C C C A T G A C C C	71854
151		72861
170	A T G G G G C C C A T G A C C C - - - - - - C A G G A - - -	74452
174		155045
511	A T G G G G C C C A T G A C C C A C T G T A C T G G A A A G	156817
224		619856
215	A T G G G G C C C A T G A C C C A C T G T A C T G G A G A G	683480
176	A T G A G G C T C - - - - T C C A - - - - - - - - - - - -	1291208
541	G A A A A C C A C T G C G T C T C C T T A T C T G G A C A C	consensus
318	- -	8941
324		10033
262	- -	10644
409	G A A A A C C A C T G C G T C T C C T T A T G T G G A C A C	10774
185		71854
151		72861
191	- - - - - - - - C T G C - - - - - - - - - - - - - - - - -	74452
174		155045
541	G A A A A C C A C T G C G T C T C C T T A T C T G G A C A C	156817
224		619856
245	G A A A A C C A	683480
189	G G A G A C C A - - - - - - - - - - - - - - - - - G A G A C	1291208

FIGURE 2I

571	G T G C A G G C T G G T A T T T T C A A A C C C A G A T T T	consensus
318	- - - - -	8941
324		10033
252	- - - - -	10644
439	G T G C A T G C T G G T A T T T T C A A A C C C A G A T T T	10774
185		71854
151		72861
195	- - - - - T A C T C - - - - -	74452
174		155045
571	G T G C A G G C T G G T A T T T T C A A A C C C A G A T T T	156817
224		619856
252		683480
202	- - - - - C T T T C - - - - - T	1291208

**FIGURE 2J**

501	G C T A T G C G G G G C T G T G C T A C A G A G A G T A T G	consensus
313	- - - - - G G G G - - - - -	8941
324		10033
252	- - - - - T	10644
469	G C T A T G C G G G G C T G T G C T A C A G A G A G T A T G	10774
185		71854
151		72861
200	- - - - - C G G N G T T A T A - - - - -	74452
174		155045
601	G C T A T G C G G G G C T G T G C T A C A G A G A G T A T G	156817
224		619856
252		683480
208	G C T - - - - - G G C - - - - -	1291208
531	T G C T T T A C C A A G C C T G G T G C T G A A G T A C C C	consensus
322	- - - - -	8941
324		10033
262		10644
499	T G C T T T A C C A A G C C T G G T G C T G A A G T A C C C	10774
185		71854
151		72861
210	- - - T C C A C C A - - - - - C C	74452
174		155045
631	T G C T T T A C C A A G C C T G G T G C T G A A G T A C C C	156817
224		619856
252		683480
214	- - C T T T - - - - - G T G T T G - - - - -	1291208
661	A C A G G C A C C A A T G T C C T C T T C C T C C A T C A T	consensus
322	- - - - -	8941
324		10033
262		10644
529	A C A G G C A C C A A T G T C C T C T T C C T C C A T C A T	10774
185		71854
151		72861
219	A T G G G C C C C A A G G - - - - - A C C A C	74452
174		155045
661	A C A G G C A C C A A T G T C C T C T T C C T C C A T C A T	156817
224		619856
252		683480
224	- - - - - C T C - - - - -	1291208

FIGURE 2K

09875520.060601

591	A T A G A G T G C A C T C A C T C C C C C T G A A A A G C T	consensus
322	- - - - -	8941
324		10033
262		10644
559	A T A G A G T G C A C T C A C T C C C C C T G A A A A G C T	10774
185		71854
151		72861
237	A T G - - G T A - A C C A G C T C C T T C T G - - - - - C T	74452
174		155045
691	A T A G A G T G C A C T C A C T C C C C C T G A A A A G C T	156817
224		619856
252		683480
227	- - - - - T G C A C - - - - - C C T C C T G G G - - - - -	1291208

FIGURE 2L

721	A T C T G A A C A G A G G A A G A T A A T G T A G T G T G A	consensus
322	- - - - -	8941
324		10033
262		10644
589	A T C T G A A C A G A G G A A G A T A A T G T A G T G T G A	10774
185		71854
151		72861
259	G C C A G A G C N A C G G C - - - - - T G C A A C - - - -	74452
174		155045
721	A T C T G A A C A G A G G A A G A T A A T G T A G T G T G A	156817
224		619856
252		683480
241	- - - - -	1291208
751	A G T C C C C A T T T G T C C T C A G C C T G T A A C T T C	consensus
322	- - - - C C C A T T	8941
324		10033
262		10644
619	A G T C C C C A T T T G T T C C T A G N C T G T A A C T T C	10774
185		71854
151		72861
279	A N T G C C - - T T T N T - - - - G T C T G T N - - - - C	74452
174		155045
751	A G T C C C C A T T T G T C C T C A G C C T G T A A C T T C	156817
224		619856
252		683480
241	- - - - - T C T T G G - - - - -	1291208
781	C C C G T G T G - C C T A T A A A G A A G T T A A T A G A G	consensus
327		8941
324		10033
262		10644
649	C C - G T G T G G C C T A T A A N G A A G T T A A T N G N G	10774
185		71854
151		72861
298	C C T - - - T G A C C - - - - - A A T C T N A C T G A G	74452
174		155045
781	C C C G T G T G - C C T A T A A A G A A G T T A A T A G A G	156817
224		619856
252		683480
247	- - - G T G C	1291208

FIGURE 2M

810	C A C T C G A G	consensus
327		8941
324		10033
262		10644
678	C A A A N N A N A A A G A A A A A A A	10774
185		71854
151		72861
318	- - - - - - - - - - - - - - - A A T N G C C T G A T T	74452
174		155045
810	C A C T C G A G	156817
224		619856
252		683480
250		1291208

FIGURE 2N

1 MRLSRRPETFL LAFVLLCTLLGLG C PLHCE GIPL aa  
1 M[K-----Y]L[HTIC]LL[FIFVAR]G[NSRSCD] CNF aa

31 ICTAAGSRCHGOMKTCSSSDKDT CVLLVGKA GIPL aa  
24 [FCHNI]G[KD]C[D]G[YEEE]CSS[PE]D[V]C[GKVLLEI] CNF aa

51 TSKGKELVHTYKGCIRSODCYSGVISTTMG GIPL aa  
54 [SSASLSVRTVH]K[N]C[FSS][SI]C[KLG]QFDVNI G CNF aa

91 PKDHMTSSSFCCOSDGCNS-[AFLSVPLTNL] GIPL aa  
84 [HHSYIRGRIN]CCEKELCEDOPF[PGL]PLSK- CNF aa

120 TENG LMC PACTASFRDKCMGPMTHCTGKEN GIPL aa  
113 [-P]NG[YY]CP[GAI]GLF[TKDSTEYEAT]C[KGT]ET CNF aa

150 HCVSLSGHVQAGIFKP--RFAMRG CATESM GIPL aa  
142 [K]C[INIV]GH[-RYEQ]F[PGDISYNLX]GC[VSS--] CNF aa

178 CFTKPGA EVPTGTNVLF LHHIECTHSP [ ] GIPL aa  
169 C[PLLSLSNATFEQ]N[RNY]L[EKVE]CKDAIRLA CNF aa

204 [ ] GIPL aa  
199 SL [ ] CNF aa

### FIGURE 3

### FIGURE 4

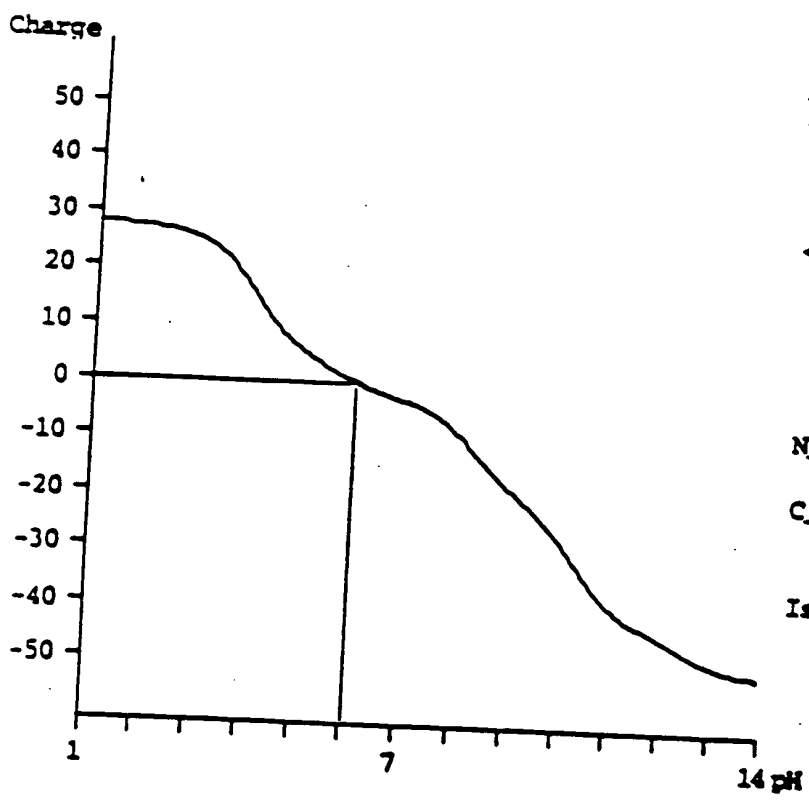


The graph displays a time series with a horizontal trend line. The y-axis is labeled from -5 to 5 in increments of 1. The x-axis is labeled from 1 to 200 in increments of 40 (1, 41, 81, 121, 161, 200). The data series is represented by a jagged line that fluctuates around a horizontal line at approximately y = -0.5. The fluctuations are relatively consistent in amplitude throughout the time period.

FIGURE 5



0987550-060501



Amino Acid	Number	pKa
<Positive>		
Arg(R)	8	12.5
His(H)	6	6.0
Lys(K)	13	10.5
<Negative>		
Asp(D)	9	3.9
Cys(C)	17	8.3
Glu(E)	15	4.3
Tyr(Y)	9	10.1
N_terminal	Met(M)	9.3
C_terminal	Leu(L)	2.3
Isoelectric point [pI] 6.06		

FIGURE 7